



BIENNIAL REPORT TO THE LEGISLATURE

**NEW HAMPSHIRE DEPARTMENT OF
ENVIRONMENTAL SERVICES
POLLUTION PREVENTION PROGRAM**

JANUARY 2001 - DECEMBER 2002

October 2003



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October 2003

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EXECUTIVE SUMMARY

New Hampshire Pollution Prevention Program (NHPPP) offers non-regulatory, free, confidential assistance to New Hampshire businesses, municipalities, public agencies, organizations and residents. NHPPP primarily serves small businesses to address their environmental needs, but also works with medium and large sized companies and organizations. NHPPP assists businesses through a wide variety of activities, including outreach, site assistance, information research and education, that are described in this report.

NHPPP's principal objective is to help the regulated communities to understand pollution prevention and incorporate P2 into their operations. The program does this through a number of statewide efforts, including site assessments, newsletters, web pages, information requests, and training. In 2001 and 2002, NHPPP received grants from EPA-New England to work with hospitals, dental offices, marinas, schools and motor vehicle salvage facilities, as well as to employ a new regulatory/technical site assessment protocol called CLEAN-P2. NHPPP sponsors the Governor's Award for Pollution Prevention, Pollution Prevention Conference, Pollution Prevention Week, and the Pollution Prevention Internship Program. Within the Department, the NHPPP has undertaken an effort to incorporate P2 into daily routines and into job activities of Departmental employees.

P2 helps companies improve their bottom lines by eliminating waste and wasteful practices and encouraging a more efficient use of raw materials and resources, including water and energy. P2 protects the environment by reducing or eliminating hazardous waste generation, toxic water discharges and hazardous air emissions. One of the best ways for businesses to explore their pollution prevention options is to contact NHPPP.

I. Introduction



RSA 21-O:18 requires the Department of Environmental Services (Department) to provide a biennial report to the Governor, the Legislature and House Environment and Agriculture committee on the Department's efforts to integrate and promote pollution prevention concepts and opportunities. This report covers activities and projects for the period from January 1, 2001, through December 31, 2002. It describes what pollution prevention is, provides a detailed accounting of the pollution prevention activities that have taken place over the reporting period and depicts future projects and strategic efforts.

II. Pollution Prevention Legislation

Chapter 74 of the Laws of 2002 re-authorized the New Hampshire Pollution Prevention Program (NHPPP) in the Department until 2010. The 2002 law recognizes the effectiveness of the Department's pollution prevention (P2) efforts in reducing hazardous waste, air emissions, wastewater discharges, while achieving substantial cost savings to participating companies. Furthermore, P2 encourages enhanced voluntary compliance with environmental rules and regulations, and provides opportunities for companies to work cooperatively with the Department. Chapter 74 gave the Department a clear legislative directive to continue to pursue prevention as the preferred approach to environmental protection. The bill continues funding from the Hazardous Waste Cleanup Fund for the NHPPP, including the Pollution Prevention Coordinator and Pollution Prevention Program Manager, both full time positions within the Department.

III. Benefits of Pollution Prevention

Pollution prevention reduces or eliminates waste *at the source*, avoiding the *generation* of waste. Pollution prevention also emphasizes a *multi-media* perspective, which considers the impacts of pollution on air, land and water simultaneously. Viewing pollution from a multi-media perspective means that pollution will not be shifted from one medium to another (e.g., water to air), without considering overall environmental impacts.

Pollution prevention concepts are based on elimination and reduction of waste, continuous improvement, and teamwork. The Department is committed to facilitating pollution prevention as an environmental protection measure wherever feasible and effective. In any case where pollution prevention options have been explored and found not feasible, recycling, treatment, and disposal options are examined, in that order.

Reducing or eliminating pollution at the source makes good sense from an environmental, as well as a fiscal, perspective and thus is a win-win situation for businesses, individuals, the State, and the environment. Businesses save money by using raw materials more efficiently, generating less hazardous materials, and reducing waste management costs. The State saves money because pollution prevention helps companies achieve and maintain compliance, and it is less time consuming (and therefore less expensive) for the Department to regulate companies that are in

compliance with environmental laws. Individuals and the environment win because pollution prevention can provide more effective protection for public health and the environment, since less waste is actually generated, reducing the chance of pollutants being released into the environment.

New Hampshire businesses, such as Millipore Corporation of Jaffrey, are using P2 to their competitive advantage.

Millipore Corporation benefits from P2 projects.

Millipore Corporation is a manufacturer of high-technology membrane filters located in Jaffrey. The company won a 2001 Governor's Award for Pollution Prevention for its facility-wide pollution prevention program.

P2 Program project benefits included:

- ☐ Reducing halocarbon gas usage for an annual savings of over \$100,000.
- ☐ Reducing electrical energy usage by installing various speed drives on air handling systems for an annual savings of \$13,000.
- ☐ Reducing methylene chloride usage by an additional 9 percent for a cost savings of \$3,000.
- ☐ Recycling 50 percent of solid waste for an annual savings of \$3,400.

Total Savings: \$119,400

No matter what the enterprise, operational activities generate waste. In a typical office setting, wastes include paper, toner cartridges, fluorescents bulbs, and emissions associated with energy consumed in operating the office and commuting. The manufacturing sector generates office wastes as well as scrap metals, process water, hazardous chemicals, and wasted energy. P2 options, process and product modifications, and best management practices are typically considered when trying to identify all options to reduce waste generation, no matter where the waste is generated in the facility.

Pollution prevention helps businesses be more competitive by:

1. Saving money in costs related to materials, operations, and pollution or waste treatment and disposal.
2. Using raw materials, staff resources, equipment, and energy and water more efficiently.
3. Improving worker health and safety by improving air quality, removing toxics substances, and decreasing personal protective equipment requirements.
4. Decreasing regulatory burdens by eliminating the need for permits, manifesting, monitoring and reporting.
5. Improving community relations, company image, and customer loyalty.

IV. New Hampshire Pollution Prevention Program

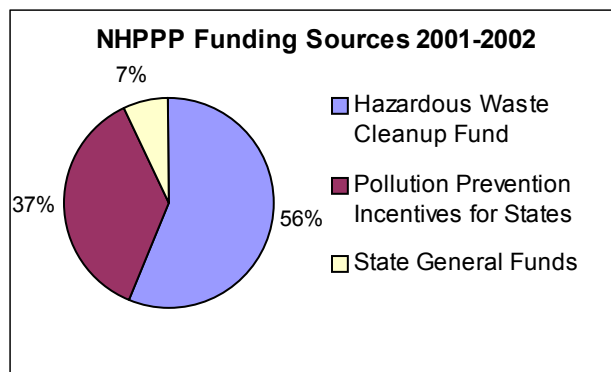


New Hampshire Pollution Prevention Program (NHPPP) offers non-regulatory, free, confidential assistance to New Hampshire businesses, municipalities, public agencies, organizations and residents. NHPPP primarily serves small businesses to address their environmental needs, but also works with medium and large sized companies and organizations. NHPPP assists businesses through a wide variety of activities described in this report that include site assessments, technical research and education.

Although the NHPPP is located in the Waste Management Division, it is a multi-media program and works with the regulated community on waste, air and water issues. NHPPP staff work closely with other Departmental programs to draw from staff experience in those programs, such as the Air Resources Division Small Business Ombudsman, and the Water Division Pretreatment Coordinator. The majority of NHPPP's projects are described in the Core Program Activities, Pollution Prevention Incentives for States (PPIS) Initiatives, Department Integration, and Mercury Sections.

Funding and Staff

NHPPP is currently funded from three different sources: the State's Hazardous Waste Cleanup Fund (56 percent), EPA-New England Pollution Prevention Incentives for States (PPIS) grant (37 percent), and the State's general funds (7 percent). The Cleanup Fund supports two, full-time positions (the P2 Coordinator and the P2 Program Manager) and is used mostly for salaries and benefits. EPA's Pollution Prevention Incentives for States (PPIS) grant monies are awarded to the Department to perform specific projects that focus on various industry sectors each year and support two part-time positions and expenses associated with project development and completion. The State general fund supplies in-kind match to the PPIS grant for time spent on P2 projects, either through staff time or other budget needs.



Source: DES, December 2002

V. Partnerships

NHPPP has a long history of building strong partnerships with organizations that complement each other's skills. The day-to-day partnering with other assistance providers is what makes NHPPP so valuable to its customers.

Small Business Technical Assistance Program

NHPPP works closely with the Department's Small Business Technical Assistance Program (SBTAP) to help small businesses meet and exceed compliance with state and federal air

SBTAP

regulations. In 2000, this partnership was able to create a part-time temporary position to assist NHPPP and to coordinate the PrintSTEP initiative. The initiative enables the Department to test new approaches in making the regulatory system more effective and flexible for the printing industry. Participation in the program is voluntary and does not reduce any of the standards that must be met. The program does, however, promote the reduction of government oversight at printing facilities, offers special compliance tools, enhances public involvement, and improves the reporting procedures for environmental permit holders.

Department of Health and Human Services

Usually, a company's environmental manager is also the health and safety coordinator. This connection has led to an obvious partnership with Department of Health and Human Services' Occupational Health and Safety (OHS) program. NHPPP refers businesses to OHS and vice versa. For the most part, when a substitution of a toxic chemical to a non-toxic alternative occurs, this will also improve a worker's health and safety. While the OHS program is a little different from NHPPP, the goal is the same: to improve health and safety of the workers, community, and the environment.

Biomonitoring Council

The New Hampshire Department of Health and Human Services, Public Health Laboratory received a grant from the Centers for Disease Control (CDC) to establish a statewide workgroup and biomonitoring plan for New Hampshire. This one-year grant may result in an additional CDC grant to implement the plan. The Biomonitoring Council workgroup is comprised of members from other state agencies, city health departments, universities, state representatives, and public environmental advocacy groups. DES is represented by staff from the NHPPP and the Air Toxics Program. This workgroup meets regularly to review the current capabilities for human biomonitoring in New Hampshire, review the criteria for prioritizing chemicals, and priority rank these chemicals using the criteria developed by the workgroup. Compounds were evaluated and ranked based upon a number of criteria, including: the magnitude of population exposed, severity of health effect, toxicity, exposure data in New Hampshire, and the invasiveness and validity of the laboratory test. Recommended compounds for further study include: arsenic, mercury, cadmium, uranium, polybrominated diphenyl ethers (brominated flame retardants), phthalates, organophosphate pesticides and cotinine (a biomarker for tobacco smoke).

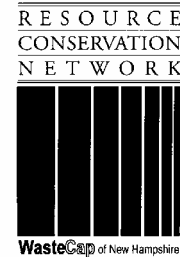
N.H. Small Business Development Center

NHPPP partners with the environmental counselor at the New Hampshire Small Business Development Center (SBDC) on a variety of projects. In September 2001, the partnership organized a Banker's Forum in Portsmouth, Meredith and Manchester to encourage bank and insurance representatives to review environmental records and initiatives as well as financial criteria. Studies have shown that businesses that initiate P2 projects also are a good financial risk. Fleet Bank, one of the presenters, has a program that gives a "higher scorecard" to those companies that have made sound environmental decisions, such as implementing an environmental management system.

NHPPP and SBDC also perform joint site assessments at New Hampshire businesses. The SBDC environmental counselor program is similar to NHPPP, in that it offers free and confidential environmental assistance to business. By partnering together on site assessments, the business gets a two-for-one “deal” on complying with environmental rules and regulations and pollution prevention opportunities.

WasteCap Resource Conservation Network

WasteCap ReCoN is an initiative of the Business and Industry Association of New Hampshire. WasteCap provides businesses assistance on reducing solid waste, conserving energy and water, and preventing pollution. NHPPP, along with the Governor’s Office of Energy and Community Services, is working with WasteCap on the New Hampshire Industries of the Future (NHIOF) project. NHIOF brings energy efficient technologies to manufacturers, with a focus on pulp and paper, sawmills, rubber and plastics, and metalworking.



Londonderry Eco-Industrial Park

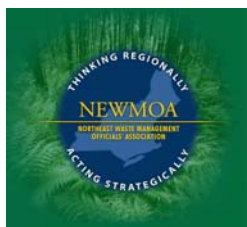
In 1996, the Town of Londonderry acquired a 100-acre parcel of land in an industrial-zoned area near the Manchester airport. Town Planner Peter Lowett wanted to see the area developed in a similar manner to an industrial park in Kalundborg, Denmark, where the industries operated in a closed-loop, “symbiotic” manner with the waste of one industry being the feedstock of another. Although several such industrial parks were in planning stages throughout the United States, they were generally brownfield sites or existing developed sites and were partially funded by grants: the Londonderry site was virgin land, has no outside funding, and has to compete with “standard” industrial sites.

The NHPPP participated as a member of the Eco-Industrial Park Advisory Board that set up the requirements for development of the park, construction of tenant facilities and operation of tenant facilities. The first requirement for operating within the Park, written into the Park bylaws, is that each tenant develops an environmental management system (EMS), modeled after ISO 14000 standards. Furthermore, the tenants must provide annual, public reports describing their progress meeting their EMS. Because the ultimate goal of the Park is to reduce its overall volume of generated wastes to zero, pollution prevention is an integral part of each facility’s operation.

The first facility seeking to build within the Park was the AES Cogeneration Facility, a state-of-the-art gas-fired electrical generating plant. Construction began in 2000 and the plant came on-line in May 2003. Since then, two additional facilities have been constructed in the Park and, like AES, they constructed their buildings using environmentally protective methods and agreed to meet all the environmental requirements established by the advisory board. As of January 2003, there are three remaining lots for development although the developer has indicated an abutting piece of land may be added to increase the size of the Park.

Northeast Waste Management Officials Association

The Northeast Waste Management Officials' Association (NEWMOA) is a nonprofit, nonpartisan interstate association that has a membership composed of the hazardous waste, solid waste, waste site cleanup and pollution prevention program directors from environmental agencies in



Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont. The Governors of the New England states established NEWMOA as an official regional organization to coordinate interstate hazardous and solid waste, and pollution prevention activities. EPA-New England formally recognized NEWMOA in 1986.

NEWMOA coordinates regional P2 activities among the state environmental agencies of New England, provides expertise to those agencies, hosts workshops and regional meetings, develops technical resources for the P2 community, and hosts the Northeast States Pollution Prevention Roundtable. NHPPP has been a member of this Roundtable and has worked with NEWMOA since 1991 when the NHPPP was first established.

NEWMOA also sponsors a number of workgroups to coordinate efforts in the New England states on specific topics. New Hampshire has been involved in the following workgroups:

- P2 Week
- Mercury
- Marinas
- P2 Information Development
- P2 Innovative Technology
- P2 Metrics and Compliance
- Roundtable Steering Committee
- Motor Vehicle Salvage Facilities
- Interstate Mercury Education and Reduction Clearinghouse

National Pollution Prevention Roundtable

NHPPP is active in the National Pollution Prevention Roundtable (NPPR), which coordinates state P2 activities across the nation and provides a national forum for promoting pollution prevention efforts. The organization's members are composed of the country's preeminent P2 experts from federal, state and local government P2 programs, small business assistance networks, non-profit groups, industry associations, and consulting firms. NHPPP is on the regulatory integration and healthcare working groups.



Multi-State Working Group

In 1996, EPA, state regulatory agencies, businesses, universities and non-profit organizations formed the Multi-State Working Group (MSWG) to collect and analyze data on the environmental and economic results of implementing an environmental management system (EMS) into the National Database on EMSs (NDEMS), and in a broader sense, promote improvement in the state of the environment through the use of new system-based tools. The Department is an active member of the MSWG, including work to gather NDEMS data under a state project examining facilities adopting EMSs.

VI. Core Program Activities

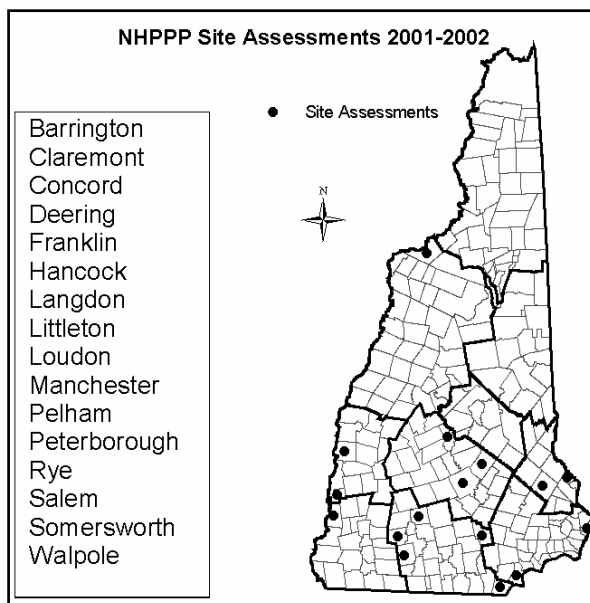
NHPPP strives to integrate P2 into New Hampshire's industry, government and communities. NHPPP achieves its goals through a variety of strategies, core activities and sponsored events.

Assistance to the Regulated Community

NHPPP's principal objective is to assist the regulated community to understand pollution prevention and incorporate P2 into their operations. The program does this through a number of efforts including site assessments, education, web pages, information requests, statewide workshops and training.

Site Assessments

Upon request, NHPPP provides free, confidential site assessment visits to New Hampshire businesses, municipalities and institutions. During these visits, NHPPP reviews the facilities' waste-generating processes in order to identify pollution prevention opportunities. Recommendations may include strategies such as substituting non-toxic (or less toxic) chemicals in place of hazardous substances, implementing best management practices, initiating in-process reuse and recycling, reducing reject rates for parts, or simple housekeeping tips. During the reporting period, the NHPPP provided site assessments to 16 companies and municipalities across the state. These companies ranged in size from three to 200 employees. Business sectors visited included municipal public works departments, motor vehicle salvage facilities, a laboratory, a long-term healthcare facility, dental office, a metal casting facility, and plastic molding facility. Written reports and assistance with project implementation are provided to each business.



Source: DES, January 2003.

Follow-up site assessments are scheduled six to eight months after report is completed. The purpose of the follow-up is to evaluate any measurements and to assess the effectiveness of the initial site assessment. At the advice of NHPPP, one of the facilities implemented three energy conservation projects, initiated an in-house reject tray recycling program, and organized a team to review capital purchasing decisions, including environmental issues.

Pollution Prevention Newsletter

Wastelines is NHPPP's newsletter, created and distributed since 1993. The newsletter was developed to educate stakeholders on pollution prevention opportunities and regulatory issues and updates. Recent *Wastelines* issues have included articles on environmental management systems, water conservation and wastewater recycling, hazardous waste rule changes, computer recycling, Storm Water Phase II Final Rule, where to find P2 information on the Internet, calculating costs and benefits of P2, and the Governors Award for Pollution Prevention.

Wastelines also provides a calendar of events and is available in hard copy, or on NHPPP's website at www.des.state.nh.us/nhPPP/wlnews.htm. The newsletter has a mailing list of 750 and

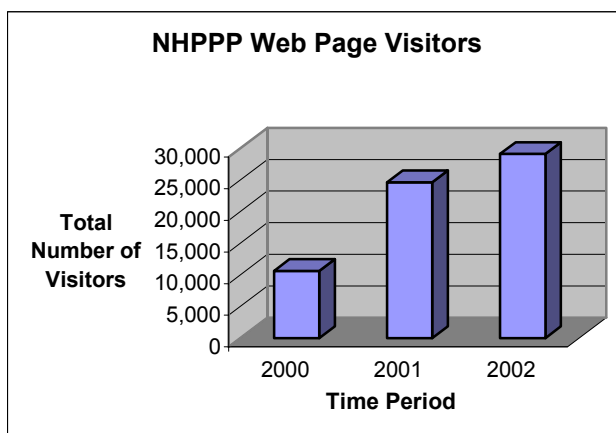
is also available at many of NHPPP's events. Businesses, government and other organizations can also receive *Wastelines* via email. During the reporting period, seven issues of *Wastelines* have been published, and more than 6,000 newsletters distributed.

Website

Many businesses, organizations and citizens seek technical and regulatory information, innovative technologies, and best management practices over the Internet. To address this audience, NHPPP hosts a web page at www.des.state.nh.us/nhppp. The website continues to add information, links, publications, and topics to meet the growing needs of visitors.

NHPPP's website offers information on:

- General P2 information NHPPP services.
- Program and projects, such as the Governor's Awards and UNH internship program.
- Events, such as the annual P2 Conference and P2 Week.
- Publications, such as the NHPPP newsletter, *Wastelines*, and best management practices checklists.
- Hot topics, such as mercury and water conservation.
- "P2 for Industries," including environmental management systems and tips for reducing hazardous wastes.
- "P2 for Households," such as alternative household products and household hazardous waste programs.
- Sector information, includes current and past PPIS projects, automotive, dental offices, healthcare facilities, marinas, municipalities, schools and wood finishing.



Source: DES, January 2003

Information Requests

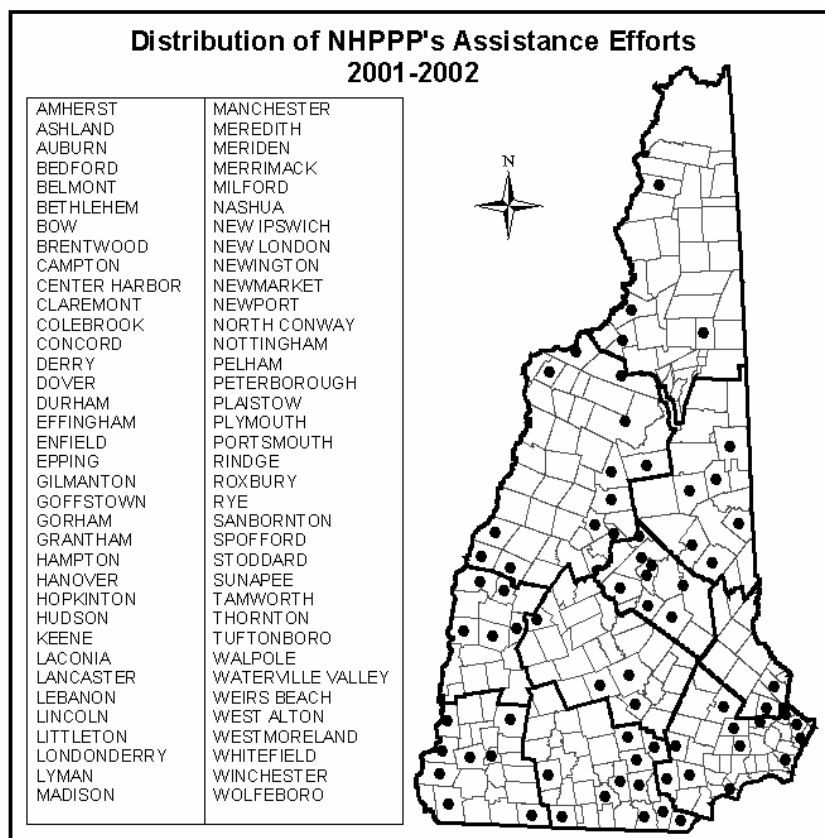
NHPPP also provides a significant amount of technical and compliance assistance without going on-site. Information on pollution prevention, new technologies, and regulatory issues is readily available just a phone call or email away. Businesses and individuals may contact NHPPP for information toll-free at 1-800-273-9469 or email at nhppp@des.state.nh.us. During the reporting period, NHPPP provided technical assistance to 341 callers, and provided them with 1,165 documents in response to their requests. Seventy-seven percent of information requests were from New Hampshire businesses and residents, 22 percent of requests were from out-of-state and 1 percent was from other countries, including Canada, Argentina and Portugal.

Pollution Prevention Training

NHPPP performs many presentations and workshops throughout the year. Generally, these presentations are by request, and often NHPPP is invited back year-after-year. During the reporting period, NHPPP gave 12 presentations to over 450 stakeholders and received positive reviews. Over 850 pollution prevention documents, such as technical reports, fact sheets and our P2 guide, *Planning for Profits*, were disseminated at these events.

In October 2002, NHPPP presented “Best Management Practices for Public Works Departments” in Manchester and New London. The workshops were organized by UNH Technology Center to help municipal highway garage employees improve their operations, identify P2 opportunities, and avoid potential environmental problems. Over 75 participants attended the workshops.

NHPPP also accepts invitations to speak at schools and has given presentations at universities, middle schools, graduate schools, and youth centers. It is important to get the P2 message across to students so that they start thinking along the lines of source reduction. Schools usually focus on recycling, which is not as protective of the environment as source reduction. In November 2001, NHPPP presented “Waste Minimization Opportunities” to 25 attendees at the College and University Hazardous Waste Management Workshop. “Pollution Prevention and Household Hazardous Waste” were presented at Pelham High School and Wolfeboro Elementary in October 2001 to 140 students.



Source: DES, January 2003.

Annual Sponsored Events

While NHPPP maintains a certain amount of flexibility to meet the ever-changing needs of its stakeholders, there are some events that NHPPP sponsors annually, because of the exceptional benefits.

Governor's Award for Pollution Prevention

Each spring since 1995, the N.H. Governor's Award for Pollution Prevention has recognized businesses, industries, municipalities and other organizations that have successfully reduced (or eliminated) waste at the source. Applications are evaluated by a panel of non-DES representatives on the pollution prevention quality of their project, how well the project followed the P2 hierarchy, how well P2 has become company-wide corporate philosophy, and how well the success of the project was measured. The level of commitment and leadership in P2 shown by the

company, and the benefits to the employees, community and environment are also evaluated. Additionally, applicants must be in good standing with state and federal environmental regulations. Awards are presented by the Governor at the annual pollution prevention conference. During the past two years, there have been five award winners and six honorable mentions. The eleven winners have reduced significant amounts of solid and hazardous wastes, air emissions, wastewater discharges, and energy consumption and saved over \$1 million.

Award winning projects from the 2001 Governor's Award for Pollution Prevention included:

- Loctite Corporation, Seabrook, manufactures adhesives and mold release compounds. Loctite eliminated ozone-depleting chemicals (an annual savings of \$17,000), eliminated solvent-based parts washing, eliminated caustic cleaning agent in two of three reactors, and improved drying process to reduce solvent by-products (an annual savings of \$7,000).
- Millipore Corporation, Jaffrey, manufacturers high-technology membrane filters. Millipore reduced halocarbon gas usage (an annual savings of \$100,000), reduced energy usage (an annual savings of \$13,000) and increased recycling to 50 percent (an annual savings of \$3,400).
- Pitco Frialator, Bow, manufactures commercial frying and cooking equipment. Pitco reduced raw material costs (an annual savings of \$100,000), reduced over 44,000 pounds of toxic air emissions, and installed a solvent distillation unit to recycle 90 percent of solvent waste.



Picture l-r: Tammy Hill (Pitco), Robert Granger (Pitco), Former Governor Jeanne Shaheen, Leslie Campbell (Pitco), Herb Bennit (Pitco), and Sara Johnson (NHPPP), April 2001

Award winning projects from the 2002 Governor's Award for Pollution Prevention included:

- Erie Scientific Company, Newington, manufactures microscope slides, cover glass slips, DNA plates, and a variety of medical equipment. Erie initiated a water recycling project their reduced water use by 17 million gallons a year (an annual savings of \$80,000) and implemented "Slides for Schools Program," which donated over 400 pounds of good quality slides to New Hampshire schools.
- Rockwell Automation, Manchester, assembles sensing devices and performs other on-site processes that include surface mount electronic assembly, injection molding, and associated tool and die making. Rockwell initiated a waste stream reduction program that recycles over 200,000 pounds/year including spool recycling (an annual savings of \$3,400) and implemented an energy conservation program (an annual savings of \$54,600).



Picture, l-r: Former Governor Jeanne Shaheen and Pamela Bealo, Rockwell Automation, April 2002

Annual Pollution Prevention Conference

For the past ten years, New Hampshire assistance providers have sponsored a pollution prevention conference. Partners include University of New Hampshire, EPA-New England, New Hampshire Small Business Development Center, the Governor's Office of Energy and Community Services, WasteCap ReCoN/Business and Industry Association-New Hampshire, and the Department of Resources and Economic Development. The conference is sponsored in part by New Hampshire businesses, including Ford Motor Company, GZA GeoEnvironmental Inc., Honda, JMD Industries, Public Service of New Hampshire, Sanmina, General Motors, and Millipore Corporation. The conference draws participants from all over New England, and has exceeded 300 participants during the two-year reporting period. Governor Jeanne Shaheen gave the welcoming address at the conference both years of the reporting period and presented the Governor's Award.

Topic sessions included:

- Advanced Technology Vehicles
- Industries of the Future Initiative
- Management of Electronic Waste
- Energy Performance Contracting
- Emergency Management Planning
- Metrics and Marketing
- Coating Alternatives for Metal Finishers
- Chemical Inventory Management Systems
- Environmental Regulatory Updates

Pollution Prevention Week

To increase P2 awareness throughout New Hampshire, NHPPP actively promotes National Pollution Prevention Week, which is the third week of September. Each year, a joint resolution has been coordinated by the Northeast Waste Management Officials' Association (NEWMOA) and has been signed by environmental agency commissioners in all six New England states, New York, New Jersey and EPA-New England Region 1 and Region 2 administrators. The resolutions proclaim P2 week, present each year's theme, and encourage participation in planned activities.



Additionally, NHPPP develops a New Hampshire P2 Week Proclamation signed by the Governor.

During the reporting period, NHPPP exhibited displays on source reduction, environmentally friendly purchasing, and recycling; e-mailed P2 "tips of the day" to over 500 Departmental employees; included P2 messages in paychecks that are sent to all of the approximately 11,000 state employees; distributed P2 Week posters; and created a web page dedicated to the P2 Week theme including tips for businesses and consumers.

"Environmental Preferable Purchasing – Shop for a Better Environment" was the 2001 theme. Environmentally Preferable Purchasing (EPP) takes into consideration the impacts a product or purchase has on the environment. In 2002, the theme was "Save a Watt – Save a Lot." Conserving energy and using clean power will directly contribute to improvements in air quality and public health.

Pollution Prevention Internship Program

Each year, NHPPP partners with the University of New Hampshire (UNH) to coordinate a summer internship program with New Hampshire companies and organizations and EPA-New

England. Participating students are required to take a ten-week training course on P2 offered by the Chemical Engineering Department. NHPPP provides several classes for the course each year, and coordinates the other lectures with UNH. Most of the speakers are representatives from New Hampshire businesses such as Public Service of New Hampshire, Teradyne, and Portsmouth Naval Shipyard.

The students who participate in the program receive valuable real-world experience by working on actual projects within participating companies. These companies and organizations are introduced to pollution prevention and benefit from relatively low wage labor to complete a P2 project they otherwise might not attempt. Some companies request an intern because they have a specific project that they need assistance with; other companies request an intern to bring in fresh ideas and a pollution prevention perspective.

To date, 86 interns have been placed at 44 companies and organizations in New Hampshire, saving them more than \$2.8 million through P2 projects. Most host companies have been very satisfied with the internships, and request an intern from the program year after year. At the end of the summer, the interns make professional presentations on their summer P2 projects to an audience of participating companies, the Department and EPA-New England, UNH faculty, and other interns.



2002 P2 Interns and representatives
from UNH, DES, and EPA

VII. Pollution Prevention Incentives for States Initiatives

In 2001 and 2002, NHPPP received two federal grants from EPA-New England to work with hospitals, dental offices, marinas, schools and motor vehicle salvage facilities, as well as employ a new regulatory/technical site assessment protocol called CLEAN-P2.

Reducing Persistent Bioaccumulative Toxics in the Healthcare Sector: *Hospital Project*

NHPPP partnered with the New Hampshire Hospital Association Foundation for Healthy Communities (FHC) to promote the reduction of mercury use and dioxin emissions through education, promotion of alternative technologies, environmentally preferable purchasing, and source reduction opportunities at New Hampshire hospitals.



The project promoted environmental management systems, pollution prevention strategies, and encouraged New Hampshire hospitals to become a partner of the national Hospitals for a Healthy Environment initiative. As of December 2002, 15 out of 26 New Hampshire hospitals had taken the pledge to eliminate mercury at their facilities, reduce the generation of infectious waste, and increase the recycling percentage of solid waste.

In the fall of 2001, NHPPP and FHC and 26 New Hampshire hospitals joined together to form New Hampshire Hospitals for a Healthy Environment (NH3E) to promote the virtual elimination

of mercury use and the reduction of wastes generated at healthcare facilities. NH3E meets quarterly to discuss regulatory changes, pollution prevention strategies, training opportunities and other topics of concern.

In 2002, NHPPP, FHC and Health Care Without Harm (HCWH) hosted a conference for hospitals to reduce dioxin emissions through environmentally preferable purchasing (EPP) called “Reducing Our Ecological Footprint: Understanding the relationships between health, the environment and the products used in healthcare.” Over 70 attendees, representing hospitals, government and others from New Hampshire, New England and other east coast states, participated in this workshop. A HCWH representative noted that the workshop was the first of its kind in New England and possibly the United States.

NHPPP and FHC created *Pollution Prevention Resources for Healthcare Facilities: Web-Based Listings for Mercury, Dioxin and Other PBT Reduction* to provide New Hampshire hospitals and other healthcare facilities with information and resources regarding persistent, bioaccumulative toxics (PBTs) such as mercury and dioxin. The guide introduces healthcare facilities to many useful web sites created by technical assistance providers, non-profit organizations and state agencies dedicated to promoting pollution prevention and waste reduction.

Reducing Persistent Bioaccumulative Toxics in the Health Care Sector: *Dental Project*

NHPPP and the New Hampshire Dental Society (NHDS) established a partnership to encourage the proper handling and disposal of mercury amalgam, x-ray wastes, and lead products and to promote the use of composite fillings. The project evaluated the level of awareness and current use of mercury amalgam and composite filling material, as well as recycling and disposal practices among New Hampshire dentists.

Over 41 percent of New Hampshire dentists responded to the survey distributed by the NHDS in 2001 to determine the level of awareness and disposal practices. Survey results included:

- Only 43 percent recycle amalgam.
- Only 29 percent recycle amalgam traps.
- Only 17 percent recycle mercury-containing fluorescent bulbs.
- Over 58 percent dispose of mercury-containing fluorescent bulbs inappropriately.

Based on survey results, the project generated numerous publications to provide dental offices guidance on environmental rules and laws and pollution prevention opportunities. Documents include:

- *Best Management Practices for Dental Offices in New Hampshire: Tips for Reducing Hazardous, Universal, and Solid Wastes*
- *Mercury/Amalgam Waste Handling Procedures*
- *Dental Office Waste Handling Procedures*
- *Management of Mercury Waste from Dental Offices*
- *Management of Silver Waste from Dental Offices*
- *Management of Lead Waste from Dental Offices*



Another project highlight was the work done with the New Hampshire Technical Institute in Concord. NHPPP suggested curriculum changes for the dental hygienist and dental assistance

programs and recommended proper waste management procedures of mercury amalgam and x-ray fixer solutions. All of the suggestions made by NHPPP were implemented.

New Hampshire Marina Project

NHPPP partnered with DES's Watershed Management Bureau, NH SBDC, and the New Hampshire Marine Trade Association (NH MTA) to educate marina owners on regulatory issues and pollution prevention opportunities. NHPPP conducted eight site assessments, updated the *Best Management Practices for New Hampshire Marinas: Guidelines for Environmentally Proactive Marinas*, created a Best Management Practices Assessment Checklist for N.H. Marinas, and hosted a workshop in January 2002.

The guidance document and checklist was distributed to over 149 marinas, marine dealers, lake associations, and municipal authorities. The document topics include multi-media pollution prevention opportunities and best management practices for marina design and maintenance, employee health and safety, and waste stream management.

Forty-nine attendees, representing 32 marinas, participated in the January workshop. General comments from the workshop included:

- *"Keep up the positive work and working with the marinas."*
- *"I'm glad to see the State receptive to input and willing to discuss problems without threats. We will continue to improve and meet all of the new requirements."*

Pollution Prevention in Schools



Most high schools do not have procedures to ensure proper storage, or budgets to provide proper disposal of unwanted, unused and out-of-date chemicals and are not in compliance with environmental and safety regulations. To assist New Hampshire high schools, NHPPP piloted a chemical inventory project. NHPPP and DES Special Investigation Section provided assistance at two New Hampshire high schools to perform laboratory clean-outs, review environmental regulations, and chemical inventory management strategies. The high schools disposed of over 1,500 pounds of waste in June 2002. A portion of the NHPPP's

grant assisted with the disposal costs.

NHPPP hosted a workshop entitled "Getting Toxic Chemicals Out of New Hampshire Schools" in December 2001. Eighty-five attendees, representing schools, municipalities, state and federal staff, non-profits and other interested parties, attended the workshop. Positive workshop results obtained six months later include the increased number of written purchase policies that consider an alternative prior to purchasing, meetings scheduled and attended by staff to discuss toxic and hazardous materials at schools, and teachers reviewing the curriculum to minimize the use of toxic and hazardous chemicals in the classroom.

NHPPP published two documents to assist New Hampshire schools: *Guidance for Eliminating Mercury in N.H. Schools* and *Guidance for Managing Chemicals in N.H. School Science Laboratories*. These documents were distributed to all New Hampshire high schools and will be distributed to school administrative units in the 2003-2004 reporting period.

Outreach to Motor Vehicle Salvage Facilities



Although a number of local, state and federal agencies have authority to regulate various aspects of the motor vehicle salvage facilities (MVSF) industry, these programs are managed independently of one another and do not provide comprehensive environmental oversight of the industry.

In the fall of 2002, NHPPP initiated a program that will address MVSF operations from an environmental perspective. A key component of the program includes the development and promotion of a best management practices and pollution prevention opportunities guidance document. NHPPP is partnering with the New Hampshire Auto & Truck Recyclers Association, New Hampshire Towing Association, New Hampshire Auto Dealer Association, and the New Hampshire Municipal Association to evaluate options and recommend strategies to promote workshops, technical assistance and site assessments. Workshops were held in June and August 2003.

Compliance Leadership through Environmental Assessments and Negotiation – Pollution Prevention (CLEAN-P2)

NHPPP partnered with the University of New Hampshire and EPA-New England to deliver P2 and compliance assistance to New Hampshire businesses, including metal finishers, wood coaters, printers and chemical manufacturers. CLEAN-P2 provided a site assessment by NHPPP staff (technical assistance), the NH SBDC Environmental Counselor (compliance assistance), and/or a trade or association representative.

The primary goal of CLEAN-P2 is to encourage a pollution prevention approach to environmental improvement and regulatory compliance. Companies that participated in the project were asked to implement a pollution prevention project and measure results. In 2001, NHPPP visited two printers and one metal plater. A few of the recommendations made to these companies are listed in the box below.

Recommendations to CLEAN-P2 Candidates

Printer 1: Reduce waste generation by segregating hazardous and solid waste. By reducing the generation rates of hazardous waste, the printer will drop to Small Quantity Generator status and reduce some regulatory requirements.

Printer 2: Improve worker health and safety, reduce solvent emissions, and reduce their solvent use, by switching blanket washes to one with a lower VOC content. The current blanket wash solvents and usage rates puts the facility right on the edge of needing an air permit. If the printer switches to a lower VOC content, they will fall well below the de-minimus level.

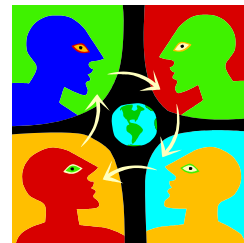
Metal Plater: Eliminate the use of methyl ethyl ketone (MEK) in the cleaning process. MEK is included in the Air Toxics Program and the plater will need to calculate MEK usage and maintain appropriate records. By eliminating MEK, the plater will improve worker health and safety, reduce solvent emissions, and regulatory requirements.

VIII. Department Integration

DES has implemented several initiatives to encourage integration of pollution prevention within the Department. The following activities were undertaken during the reporting period in an effort to incorporate P2 into daily routines within the Department and into job activities of Departmental employees.

Pollution Prevention Strategic Goals

During the reporting period, the Department set forth the *New Hampshire Department of Environmental Services Strategic Goals and Objectives 2003-2007*. As part of this effort, and in order to update the Department's *Pollution Prevention Strategy*, a team was established composed of representatives from Air Resources, Water, and Waste Management divisions, as well as the Commissioner's Office.



The P2 Goal Team developed and refined several objectives under the DES "Pollution Prevention and Sustainability" Goal. The purpose of the goal is to:

"Encourage best efforts to prevent pollution before turning to recycling, treatment and/or disposal of the materials causing pollution. Eliminate or reduce the toxicity and absolute volumes of waste materials. Eliminate accidental pollutant releases to the environment. Conserve materials, energy, and water in order to move toward a sustainable society."

Recommendations of the Goal Team incorporated into the *Strategic Goals and Objectives* include:

- Integrate P2 concepts into all aspects of regulatory programs in order to maximize environmental benefits and reduce permitting and regulatory requirements where possible.
- Identify and pursue actions that minimize DES's environmental impact.
- Partner with other assistance providers (internal and external) and stakeholders to promote the benefits of P2 and environmental management systems.
- Promote a safe and healthy environment for New Hampshire's most at-risk populations.

The DES's guiding principles and strategic goals can be found on-line at www.des.state.nh.us/mission.htm#guiding.

Department Pollution Prevention Training

In the fall of 2002, NHPPP held five P2 training sessions for Departmental staff. All staff that had not completed P2 training in 1994 and 1999 was invited to attend. Pollution prevention concepts were introduced using real world examples of New Hampshire businesses that have used P2 to solve environmental problems and save money. Over 100 staff attended these trainings, and reviews of the sessions were very positive. NHPPP encourages staff to incorporate pollution prevention activities into their work and home life through participation on the DES Green Team and through other methods, such as daily P2Tips during P2 Week.

Letters of Deficiency

Letters of Deficiency (LOD) are sent to businesses after an inspection by Department regulatory enforcement staff identifies minor regulatory problems. These letters encourage the company to use pollution prevention to address those problems. The letter provides contact information for NHPPP and provides information on where they can find technical information outside the Department. After the initial LOD is sent, NHPPP sends a follow-up letter to the company, encouraging P2 and providing additional assistance information. During the reporting period, 45 letters were sent to violating companies, and more than 300 P2 documents were distributed to fulfill these requests.

Supplemental Environmental Projects

The Department also encourages the use of supplemental environmental projects (SEPs) in enforcement cases against violating companies. SEPs are environmentally beneficial projects that a company agrees to perform as part of a Department enforcement action. The SEP offsets part of the penalty and involves a project that the company is not otherwise required to perform. SEPs that use pollution prevention benefit the company (helps them stay in compliance, reduce waste and save money), the Department (less time and effort spent to regulate companies that are in compliance) and the environment (less pollution generated).

During the reporting period, NHPPP worked with the University of New Hampshire on one of their SEPs. UNH created a methodically complex chemical inventory system from the time a chemical enters the facility services' loading dock until the final disposal of each individual chemical. The system matches material safety data sheets, hazardous communication signage, and creates a report to the local fire department on chemical volumes and location. It also has a chemical swap choice to offer a chemical to another department rather than over purchasing the same chemicals. NHPPP recommendations included offering an alternative chemical (less toxic) as a choice prior to purchasing and time limitations on the chemical swap choice option.

Green Team

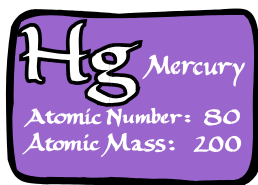
The Department's Green Team was formed in 1995 to promote environmentally sound practices in the Department and to explore improvements to the Department's use of resources and disposal of waste. The in-house volunteers encourage the Department to provide environmental leadership by minimizing its environmental impacts, including: energy conservation, water conservation, toxic use reduction, solid waste reduction, and recycling.



The Green Team has been involved in a number of very successful initiatives, including procurement of recycled content office supplies, organizing a re-use area for office supplies, creating an extensive recycling program for office waste (paper, glass, plastic and aluminum) and making recycled content mugs available for use in the cafeteria, as an alternative to Styrofoam. The Green Team also supported the procurement of alternative fuel vehicles; as of January 2003, the Department owns two electric, six hybrids (gasoline/electric), and eight compressed-natural gas vehicles.

IX. Mercury Reduction

Mercury Reduction Strategy and Task Force



The NHPPP has continued to be closely involved in state, regional, national and international mercury reduction efforts in accordance with the Department's *New Hampshire Mercury Reduction Strategy* published in October 1998. New Hampshire also has a multi-stakeholder Mercury Task Force (established in 1999) to advise the Department on implementation of the *Strategy*. The P2 coordinator co-chairs this task force and the NHPPP

has been responsible for performing much of the recommended outreach on mercury reduction called for in the *Strategy*. The Department is currently conducting an assessment of progress to date on implementing the *Strategy*, and as part of this effort will be producing an updated document.

Mercury Reduction Legislation

During the reporting period P2 staff worked on several pieces of legislation focused on reducing mercury in consumer and commercial products. HB 675, relative to mercury source reduction and HB 1251, relative to the use of dental amalgam, were the most significant legislative efforts. HB 1251 passed in the 2002 session and directs DES to develop rules for the environmentally appropriate disposal of dental amalgams (which are 50 percent mercury). To implement these requirements, NHPPP staff is working with a stakeholder group to draft regulations that will require dentists to install amalgam separators with a removal efficiency of 99 percent. The rules are expected to be in place by early 2004. HB 675 focused on labeling, disposal ban and state procurement requirements – it was retained in committee and will be revised and re-introduced in the 2004 legislative session.



Interstate Mercury Education and Reduction Clearinghouse

In order to implement the mercury product notification provisions of Chapter 278, Laws of 2000, New Hampshire joined with several other Northeastern states with similar provisions to form the Interstate Mercury Education and Reduction Clearinghouse (IMERC) in late 2001. The Northeast Waste Management Officials Association on behalf of the member states administers IMERC. IMERC serves as a central point of contact for manufacturers and distributors that are required to submit information on the type and amount of mercury-added products that they produce. New Hampshire served as the chair of IMERC in its first year of existence.

New England Governors/ Eastern Canadian Premiers

The P2 coordinator also continues to be involved in Northeastern and international efforts to reduce mercury. Under the auspices of the New England Governors/Eastern Canadian Premiers, a Regional Mercury Task Force was formed in 1998 to work on international mercury reduction efforts. Progress to date includes developing model legislation to reduce mercury in consumer and commercial products, numerous outreach and education efforts, and significant reductions in mercury emissions from major source categories such as municipal waste combustors and medical waste incinerators.

Outreach and Education

NHPPP staff has been involved in many outreach and education efforts over the reporting period. Individual sector-based projects are detailed in other sections of this report, including efforts with the dental sector, healthcare industry, plumbing and heating wholesalers and schools. For a more complete description of DES's mercury reduction efforts visit the DES website at www.des.state.nh.us/nhppp.

Hospital Fire Alarm System

In 2001, NHPPP had the unique opportunity to assist a decommissioned hospital. Dating as far back as the Civil War, the New Hampshire State Hospital installed a fascinating fire alarm system in the 1930's. Each hospital room ceiling has a sealed diaphragm, connected by a 1/8th-inch copper tube, to a vial containing mercury in the basement. As a fire heats the diaphragm, the expanded air forces the mercury in the vial to move onto a set of contact points that sets off the alarm and sprinkler system. It's a "can't fail" system that, unfortunately, requires a separate vial, with about three grams of mercury, for each room. The picture shows one bank of vials in the basement.



Manifold of mercury containing fire sensors

When the State Hospital wanted to remove the system, the NHPPP was called upon to make an inspection and provide recommendations. The chief concern, later proven to be correct, was that mercury vapors would have migrated up the copper tubing, amalgamating with the copper, and creating several tons of hazardous waste, rather than recyclable copper.

X. Pollution Prevention in 2003 and 2004

Pollution prevention assistance has evolved considerably since the concept first became widely known in the early 1990s. State and federal agencies need to be able to address changing environmental issues as well as changing customer needs. In 2003-2004, NHPPP will focus on four key areas to provide the best protection for New Hampshire's environment while ensuring optimum performance by its customers.

Reducing Persistent Bioaccumulative Toxics in the Health Care Sector

NHPPP, in partnership with N.H. Hospital Association's Foundation for Healthy Communities, will continue efforts to promote mercury use elimination and dioxin emission reduction at health care facilities. The primary focus of this project will include promoting the national Hospitals for a Healthy Environment (H2E), coordinating New Hampshire Hospitals for a Healthy Environment (NH3E), and providing technical assistance to additional health care providers, nursing homes, mental health clinics, specialty hospitals, and visiting nurses agencies. NHPPP will also promote the use of amalgam separators, which help in the reduction of wastewater discharges of mercury to publicly owned treatment works (POTW) and septic systems, and increase recovery of amalgam for recycling.

Pollution Prevention in Schools

During the last reporting period, outreach to schools was limited to high schools. For the next reporting period, NHPPP will expand outreach efforts to include grades K-8. NHPPP will conduct outreach to school administrators, perform site visits, assist the schools in identifying ways to safely remove the materials, leverage disposal options, and educate the schools on prevention techniques. NHPPP will use information learned from the two pilot high schools to expand the project to assist one small school district, preferably a district that is in great need, such as one with low income or low property value area or a rural community.

Outreach to Motor Vehicle Salvage Facilities

NHPPP will assist in the education and outreach phase of the MVSF guidance document, including hosting workshops, providing technical assistance and conducting site assessments. Additionally, NHPPP will take action to promote the removal of mercury switches in motor vehicles prior to crushing and disposal and will promote phasing out the use of switches in new vehicles.

Department Strategic Goals and Objectives 2003-2007

To better assist the regulated community, NHPPP will be creating an assistance resource guidance document that will include technical assistance providers in New Hampshire and New England, services offered, and specialty focus. The document will be distributed at workshops, conferences, and other training opportunities, as well as for compliance and assistance programs to distribute to their customers.

Pollution prevention sector and general information training will be provided to Department staff to educate and promote P2 to New Hampshire businesses, municipalities and individuals.

Over the next several years, DES will place increased emphasis on integrating pollution prevention into all its programs, including compliance assurance, permitting and assistance. In addition, DES will continue to examine its own operations and those of other state agencies in order to become more efficient and environmentally conscious. The DES pollution prevention goals can be found at www.des.state.nh.us/mission.htm#guiding.

XI. Conclusion

Pollution prevention clearly benefits both New Hampshire businesses and the environment. New Hampshire companies are using P2 and environmental management systems today to increase their profits. P2 helps companies improve their bottom line by eliminating waste and wasteful practices and encouraging a more efficient use of raw materials and resources, including water and energy. P2 protects the environment by reducing or eliminating hazardous waste generation, toxic water discharges and hazardous air emissions. One of the best ways for businesses to explore their pollution prevention options is to contact NHPPP.

